

WHAT IS CLAIMED IS:

1. A system for modeling communication networks, comprising:

a memory operable to store configuration data for a plurality of network types,
the configuration data associating each network type with components, connections,
5 and rules for connecting the components using the connections;

a processing module coupled to the memory and operable to allow a user to
select one of the network types and to design a communication network using the
components and connections associated with the selected network type according to
the configuration data.

2. The system of Claim 1, wherein the processing module is further
operable to determine whether a mode operation corresponding to a network type is
activated and to allow a user to design a communication network of that network type
if the corresponding mode of operation is activated.

3. The system of Claim 1, wherein the processing module is further
operable to allow the user to select one of the components associated with the network
type, to display a node to represent the selected component in the communication
network, and to associate equipment with the selected component.

4. The system of Claim 1, wherein the processing module is further
operable to allow the user to select one of the connections associated with the network
type, to connect two components using the selected connection according to the rules
associated with the network type, and to display a connection line between two nodes
25 to represent the connection between the two components.

5. The system of Claim 1, wherein the rules associated with the network
type indicate a maximum number of connections between one component and other
components.

6. The system of Claim 1, wherein:

the configuration data associates the network type with a hierarchy of connectors; and

the processing module is further operable to allow a user to assign subordinate
5 connectors to a connection according to the configuration data associated with the network type.

7. The system of Claim 1, wherein the processing module is further
operable to validate the user's communication network to ensure compliance with the
10 rules associated with the network type according to the configuration data.

8. The system of Claim 1, wherein the processing module is further
operable to provision some of the communication network by communicating
15 instructions to some components.

9. The system of Claim 1, wherein the processing module comprises
software instructions for modeling a generic communication network and interfaces
with configuration data for specific types of networks.

10. The system of Claim 1, wherein the configuration data associates the
20 components with component properties and associates the connections with connection properties.

11. A method of modeling communication networks, comprising:
storing configuration data for a plurality of network types, the configuration
data associating each network type with components, connections, and rules for
connecting the components using the connections;

5 receiving a user selection for one of the network types; and
designing a communication network using the components and connections
associated with the selected network type according to the configuration data.

12. The method of Claim 11, further comprising:
10 determining whether a mode operation corresponding to a network type is
activated; and
designing a communication network of that network type if the corresponding
mode of operation is activated.

13. The method of Claim 11, further comprising:
15 receiving a user selection for one of the components associated with the
network type;
displaying a node to represent the selected component in the communication
network; and
20 associating equipment with the selected component.

14. The method of Claim 11, further comprising:
receiving a user selection for one of the connections associated with the
network type;
25 connecting two components using the selected connection according to the
rules associated with the network type; and
displaying a connection line between two nodes to represent the connection
between the two components.

15. The method of Claim 11, wherein the rules associated with the network type indicate a maximum number of connections between one component and other components.

5 16. The method of Claim 11, wherein:
the configuration data associates the network type with a hierarchy of connectors; and

designing the communication network further comprises assigning subordinate connectors to a connection according to the configuration data associated with the
10 network type.

17. The method of Claim 11, further comprising validating the communication network to ensure compliance with the rules associated with the network type according to the configuration data.

15 18. The method of Claim 11, further comprising provisioning some of the communication network by communicating instructions to some components.

20 19. The method of Claim 11, wherein designing the communication network further comprises interfacing software instructions for modeling a generic communication network with configuration data for specific types of networks.

25 20. The method of Claim 11, wherein the configuration data associates the components with component properties and associates the connections with connection properties.

21. Network modeling software embodied in a computer-readable medium and operable to perform the following steps:

storing configuration data for a plurality of network types, the configuration data associating each network type with components, connections, and rules for
5 connecting the components using the connections;

receiving a user selection for one of the network types; and

designing a communication network using the components and connections associated with the selected network type according to the configuration data.

10 22. The network modeling software of Claim 21, further operable to perform the steps of:

determining whether a mode operation corresponding to a network type is activated; and

15 designing a communication network of that network type if the corresponding mode of operation is activated.

23. The network modeling software of Claim 21, further operable to perform the steps of:

20 receiving a user selection for one of the components associated with the network type;

displaying a node to represent the selected component in the communication network; and

associating equipment with the selected component.

24. The network modeling software of Claim 21, further operable to perform the steps of:

receiving a user selection for one of the connections associated with the network type;

5 connecting two components using the selected connection according to the rules associated with the network type; and

displaying a connection line between two nodes to represent the connection between the two components.

10 25. The network modeling software of Claim 21, wherein the rules associated with the network type indicate a maximum number of connections between one component and other components.

26. The network modeling software of Claim 21, wherein:
15 the configuration data associates the network type with a hierarchy of connectors; and

designing the communication network further comprises assigning subordinate connectors to a connection according to the configuration data associated with the network type.

20 27. The network modeling software of Claim 21, further operable to perform the step of validating the communication network to ensure compliance with the rules associated with the network type according to the configuration data.

25 28. The network modeling software of Claim 21, further operable to perform the step of provisioning some of the communication network by communicating instructions to some components.

30. The network modeling software of Claim 21, wherein the configuration data associates the components with component properties and associates the connections with connection properties.

31. A system for modeling communication networks, comprising:

a memory operable to store first configuration data for a first network type and second configuration data for a second network type; and

5 a processing module coupled to the memory and operable to determine whether a first mode operation corresponding to the first network type is activated and to model a communication network of the first network type using the first configuration data if the first mode of operation is activated, the processing module further operable to determine whether a second mode of operation corresponding to the second network type is activated and to model a communication network of the second network type using the second configuration data if the second mode of operation is activated.

32. The system of Claim 31, wherein:

15 the first configuration data describes components and connections that may be included in the communication network of the first network type and rules for connecting the components using the connections; and

the processing module allows a user to design the communication network of the first network type using the components and connections according to the rules.

20 33. The system of Claim 31, wherein the processing module models the communication network of the first network type by creating nodes to represent components of the first network type and creating connection lines to represent connections between the components according to the first configuration data.

34. A method for modeling communication networks, comprising:
storing first configuration data for a first network type;
storing second configuration data for a second network type;
determining whether a first mode operation corresponding to the first network
5 type is activated;
modeling a communication network of the first network type using the first
configuration data if the first mode of operation is activated;
determine whether a second mode of operation corresponding to the second
network type is activated; and
10 modeling a communication network of the second network type using the
second configuration data if the second mode of operation is activated.

35. The method of Claim 34, wherein:
the first configuration data describes components and connections that may be
15 included the communication network of the first network type and rules for
connecting the components using the connections; and
modeling the communication network of the first type further comprises using
the components and connections according to the rules.

36. The method of Claim 34, wherein modeling the communication
20 network of the first network type further comprises displaying nodes to represent
components of the first network type and connection lines to represent connections
between the components according to the first configuration data.